
Subject: Glendale Avenue/QEW Proponency with MTO

Report to: Public Works Committee

Report date: Tuesday, July 17, 2018

Recommendations

1. That an agreement with Ministry of Transportation (MTO) regarding the construction process and costs associated with undertaking the Glendale Avenue/QEW interchange **BE ENDORSED**.
2. That the estimated construction cost of \$4,000,000 associated with the Regional loop ramp to Airport Road (Appendix 1 – C3 Concept Plan) as part of the interchange Design Build delivery with DC funding from Project #89.4 (Glendale Avenue interchange) and Project #90.1 (Airport Road – Niagara Stone Road to York Road) **BE REFERRED** for consideration as part of the 2019 capital budget deliberations.
3. That the estimated construction cost of \$2,100,000 associated with Glendale Avenue/York Road traffic roundabout (Appendix 1 – C2 Concept Plan) as part of the Design Build delivery with DC funding from Project #89.6 (Glendale Avenue Extension to Queenston Road)) **BE REFERRED** for consideration as part of the 2019 capital budget deliberations.

Key Facts

- The purpose of the report is to seek Council's endorsement for the proposed Ministry of Transportation (MTO) and Niagara Region co-proponency and associated costs to undertake the Environmental Assessment, Preliminary Design, Detailed Design and Construction related to replacement of the existing Glendale Avenue/QEW interchange with a Diverging Diamond Interchange that includes the Regional infrastructure components of loop ramp to Airport Road and traffic roundabout at existing Glendale Avenue/York Road intersection.
- The proposed Diverging Diamond Interchange and loop ramp to Airport Road design and Glendale Avenue/York Road traffic roundabout has received positive response from the public at a Public Information Centre and local business Stakeholder meetings (April 2018) and the Glendale District Plan Visioning Workshop (June 2018).
- Region staff have undertaken a high level review of both the loop ramp and roundabout alternatives and have confirmed that they will adequately address traffic capacity and operational needs in this area consistent with the findings of the 2017 Transportation Master Plan (TMP).

- The Environmental Assessment and Design expenditures to be undertaken during fiscal years 2018/2019 at a cost of \$246,100 with identified funding in project 10RC1554.
- The final Transportation Environment Study Report (TESR) will provide the necessary Environmental approvals for both the MTO and Niagara Region to continue into a Design/Build project that allows for the interchange improvements to be constructed by 2021.
- MTO has indicated that the interchange construction and Regional loop ramp to Airport Road cannot be a staged construction process where the loop ramp is constructed outside the proposed Design/Build Delivery timeframe due to extensive traffic and business disruption, public concern of reconstruction activities at a recently constructed facility, significant costs associated with traffic management/detours associated with staged construction.
- MTO has indicated that EA approval and detailed design for the proposed traffic roundabout at Glendale Avenue/York Road intersection will be delivered as part of the Design/Build Contract but that the traffic roundabout does not have to be constructed as part of the interchange Design/Build delivery construction program pending completion of the Glendale District Plan.

Financial Considerations

The MTO EA and Preliminary Design work is recommending that the existing interchange configuration be reconstructed as a Diverging Diamond Interchange design with a new bridge structure that addresses the vehicle demands, provides for safe pedestrian and cycle crossing of QEW, provides access to a Park and Ride facility and possibly a relocated Ontario Tourist Information Centre. The estimated cost of the MTO interchange improvements is \$20,000,000, excluding Regional infrastructure costs.

At the request of Niagara Region, the MTO EA process evaluated alternatives that would relieve the existing and future congestion at the Glendale Avenue / York Road intersection as well as provide alternatives to the Region constructing a future Glendale Avenue extension from York Road to Queenston Road. The Glendale Avenue extension was recommended in the Transportation Master Plan and the DC Bylaw included Project #89.6 – Glendale Avenue Extension with a cost of \$13,700,000. The MTO EA study indicated that the Diverging Diamond interchange with a loop ramp to Airport Road and a traffic roundabout at the Glendale Avenue/York Road intersection will address future traffic demands and that there would not be a requirement for the Glendale Avenue extension and the associated capital cost of approximately \$13,700,000. As a result of the proposed design changes, the budget required for this project will be reduced by \$7,600,000 (Table 1) from original budget forecast.

Table 1 – Budget Savings

	Original Forecasted Budget	Proposed 2019 Budget	Budget Expense (Savings)
Glendale Ave Extension	13,700,000		(13,700,000)
Loop Ramp to Airport Road		4,000,000	4,000,000
Glendale Ave/York Road Roundabout		2,100,000	2,100,000
	13,700,000	6,100,000	(7,600,000)

The MTO EA study has indicated that the loop ramp to Airport Road must be constructed as part of the interchange Design/Build contract as they will not consider the staging of constructing of the loop ramp to a time beyond the 2021 construction time frame.

The financial risk to Niagara Region of not including the loop ramp to Airport Road as part of the MTO interchange Design/Build contract includes:

- Construction of the loop ramp to Airport Road outside of the MTO Design/Build contract will result significant costs over the current construction cost estimate of \$4,000,000 due to construction staging, traffic detours and business disruption; or,
- Requirement that the Region construct the Glendale Avenue extension to Queenston Road at a significant cost (approximately \$14,000,000) in the longer term.

Analysis

The MTO EA study included the following list of key considerations in the development and evaluation of possible interchange designs:

- Traffic demands and operations
- Traffic queues along QEW corridor
- Active Transportation opportunities
- Commuter lot provision and Ontario Travel Information Centre (OTIC) relocation
- Environmental and Social Impacts
- Gateway enhancement opportunities
- Cost and maintenance considerations of interchange design

The interchange evaluation process recommended the Diverging Diamond Interchange design as the preferred design as this design best meets the following objectives:

- Eliminates left-turn queuing and conflict points for QEW Toronto bound movements
- Reduces vehicle conflict points within interchange from 26 to 14
- Results in a very good operating Level of Service at QEW off-ramps

- Accommodates safe passage of cyclist and pedestrian traffic through the interchange
- Accommodates the relocation of the OTIC relocation
- Provides access to proposed carpool lot
- Provides a gateway and improved access to Niagara on the Lake
- Maintains good spacing for QEW traffic between the Glendale Avenue and Highway 405 interchanges

The Diverging Diamond Interchange with a loop ramp to Airport Road and a traffic roundabout at Glendale Avenue/York Road can be accommodated as part of the design and construction process to address future traffic demands and delay and possibly defer the long term need for the proposed Glendale Avenue extension to Queenston Road.

Alternatives Reviewed

The MTO EA Study identified the following alternatives as part of the Interchange evaluation process:

- Construct Diverging Diamond Interchange without improvements to Glendale Avenue/York Road intersection – Concept C1
- Construct Diverging Diamond Interchange with traffic roundabout at intersection of Glendale Avenue/York Road intersection – Concept C2
- Construct Diverging Diamond Interchange with loop ramp connecting to Airport Road– Concept C3
- Construct Diverging Diamond Interchange with loop ramp connecting to Airport Road– Concept C3 and traffic roundabout at intersection of Glendale Avenue/York Road intersection – Concept C2

The alternative review and assessment process indicated that the best value to Niagara Region is to:

- Undertake a joint EA proponentcy to obtain EA approvals for both the loop ramp to Airport Road and the Glendale Avenue/York Road traffic roundabout;
- Prepare preliminary and detailed designs for both Regional infrastructure components; and
- Construct loop ramp to Airport Road and Glendale Avenue/York Road traffic roundabout as part of the MTO contract

The analysis also included a review of possible staging of construction of MTO and Regional infrastructure projects including constructability, public acceptance, traffic detours impacts and costs.

This analysis indicated that the loop ramp to Airport Road must be constructed as part of the interchange Design/Build contract. However the traffic roundabout could be

constructed as a separate project from the interchange design project beyond the 2021 timeframe if it is not included in the MTO construction contract.

Relationship to Council Strategic Priorities

The proposed construction of the Glendale Avenue/QEW Diverging Diamond Interchange and the associated Niagara Region improvements for a loop ramp to Airport Road and a traffic roundabout at Glendale Avenue/York Road intersection will address the transportation infrastructure requirements to address existing traffic operational issues, provide improved pedestrian and cycling access across the QEW, provide infrastructure capacity to accommodate planned residential and employment growth being considered as part of Glendale District Plan and provide a Gateway to Niagara-on-the-Lake.

This initiative is tied to Council's Strategic Priorities 1, 2 and 5, 'Moving People and Goods', 'Fostering Innovation, Investment and Entrepreneurship' and 'Doing Business Differently'.

Other Pertinent Reports

<https://www.niagararegion.ca/2041/transportation-master-plan/default.aspx>

PW 18-2018, April 3, 2018 – EA and Preliminary Design – QEW/Glendale Avenue Interchange

Prepared by:

Carolyn Ryall
Director, Transportation Services
Division
Public Works Department

Recommended by:

Ron Tripp, P.Eng.
Commissioner
Public Works Department

Submitted by:

Carmelo D'Angelo, BSc, MPA
Chief Administrative Officer

This report was prepared in consultation with Jack Thompson, Transportation Lead Strategic Initiatives & Project, Beth Brens, Manager Program Financial Support

Appendices

Appendix 1 MTO Preliminary / Draft Conceptual Alternatives – Diverging Diamond Interchange with York Road Roundabout (DWG C2)

MTO Preliminary / Draft Conceptual Alternatives – Diverging Diamond Interchange with Airport Road Connection (DWG C3)

Appendix 2 MTO Presentation – April 3, 2018
EA and preliminary Design – QEW/Glendale Avenue Interchange